

Claims

1. A method for detecting nucleic acids using solid-phase-bound primers which, by binding to their specific target sequence, undergo a conformation change which enables the selective cleavage of the products of the cyclic amplification reaction (trap release primer amplification (TRAMP)), comprising the steps
 - i) providing nucleic acids to be amplified,
 - ii) carrying out the amplification reaction using at least two primers, of which at least one is coupled with a solid phase,
 - iii) generation of a cleavage site within the solid-phase-bound primers by a conformation change resulting from binding to the primer-specific target sequence,
 - iv) releasing the reaction products into the aqueous phase by cleavage within the cleavage site generated in ii) by conformation change, e.g. with the aid of a restriction enzyme,
 - v) detecting of the amplification products formed in ii) via fluorescent-optical, radioactive, chemical, chromatographic or any other methods for detecting nucleic acids,
- characterized in that
- a) at least one of the primers employed for the amplification reaction comprises, in 5'-3' direction, the following elements: coupling site for the solid phase, a first target-sequence-specific segment, a cleavage site generable by conformation change, an optional sequence which may serve for product detection,

- reamplification in a subsequent conventional PCR reaction (nested PCR), as primer binding site for a sequence reaction or for further functions, optional further sequence segments which serve for the stabilization of the double-strand-specific cleavage site, and a second sequence which is specific for the nucleic acid to be amplified,
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- 10 b) *de-novo*-synthesized DNA molecules are transferred into the aqueous phase by cleavage with a restriction enzyme either still during the *de-novo* synthesis or after the PCR amplification cycles.